1 June 1966
Ref: LJC 472-1840

25X1A

Contracting Officer

**Declass Review
by NIMA/DOD**

25X1A Subject: Contract No. ███████████
Press Release

Gentlemen:

Under the subject contract, ████████ has delivered a 70mm   25X1A
Data Block Reader. In line with this accomplishment, we wish to
make a press release to various publications (trade newspapers,
magazines, etc.), which would publicize the fact that we have
produced a solid state data retrieval system which reads digitally
coded aerial film. Although the security aspects of the subject
contract specify that "other than our association with your
organization, which is classified 'Confidential,' all other work
under this contract is unclassified," I am transmitting herewith
for your perusal a copy of the proposed press release document
which not only describes the 70mm Data Block Reader but also
contains a photograph of it.

Since we are most anxious to make this press release, but
will not do so until your concurrence is received, it is requested
that you review this proposed Press Release and advise ███████   25X1A
of your decision at the earliest possible date.

Very truly yours,

25X1A

Contracts

avw
Enc.

"This Document contains information
affecting the National Defense of
the United States within the meaning
of the Espionage Laws, Title 18,
U.S.C., Sections 793 and 794, the
transmission or revelation of which
in any manner to an unauthorized

Approved For Release 2002/01/14 : CIA-RDP78B04747A001600040007-4 ed by law."

CONFIDENTIAL

FIRST SOLID-STATE DATA RETRIEVAL SYSTEM

READS DIGITALLY CODED AERIAL FILM

25X1A

The first digital data retrieval system to incorporate 25X1A

25X1A

a solid-state data block reader has been produced here by

ation. The advanced system automatically reads the information annotated on

aerial photographic film and transfers it to punch cards with greater accuracy

than heretofore possible.

Key element of the 70mm film reader is its unique solid-state sensor.

Consisting of a linear array of silicon photodiodes approximately 1 inch long

and .004 inches wide, it can read the digitally coded data on positive trans-

parency prints up to 250 feet in length at speeds of 75 feet per minute or faster

if desired.

Spaced .006 inches apart, the photodiodes are fabricated within a single

silicon crystal using techniques pioneered and developed by the

25X1A   25X1A

The extreme uniformity of performance achieved by these

devices produces the same output signal for a given film density regardless of

25X1A

its position in the array.   circuitry is used almost exclusively

in the film reader's electronics.

The digitally coded data block, consisting of two rows of clear dots from

20 to 60 mils in diameter, is located in the upper margin of the positive film and

parallel to its length. The reader's film transport limits film wander to less than

.005 inches. However, data block movement within the film is compensated for

by switching the proper sensor elements along the array as the film advances.

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The sensor array views the data block at a 1:1 magnification through a one inch focal length lens with an aperture of f/1.9. A tungsten projection lamp with dimmer control serves as the light source, illuminating the film gate through a condenser and reflector lens.

The wander correction information is transmitted to the data block locator which locks on the block's index bits. These are checked for size and density within specification limits before their acceptance as valid. The data then is transferred to the data register where it is correlated with information from previous blocks.

Should the digital data be questionable, the film transport stops the block in the 3X viewing section of the reader. Here it is compared against the data register indicators and manual correction inserted if required. Limits for the variation in the information elements of the data block can be programmed through the reader's control panel. Validated blocks advance a counter for transmission to the output station together with the content of the data block.

The system's IBM 519 unit has the capability of punching at a rate of 100 cards per minute or one card every .6 seconds. The transferred data consists of a 29-bit binary word and 4 sets of 4 lines which may contain decimal or alpha character information.

The summary punch activates 12 rows in a sequential order handling information presented on any of the 80 columns. Synchronization of the two units is assured by using the sequentially timed row pulses from the card punch

(more)

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to assure that data from the reader flows into its column positions only when

that position is coincident with the desired row.

SOLID STATE DATA BLOCK READER

SYSTEM DIAGRAM

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┌──────────────┐        ┌──────────────┐      ┌──────────────┐
│ SOLID STATE  │        │ FILM WANDER  │      │ DATA BLOCK   │
│ PHOTOSENSOR  │───○──→ │  CORRECTION  │───→  │   LOCATER    │
│              │        │    LOGIC     │      │              │
└──────────────┘        └──────────────┘      └──────────────┘
        │                      │                      │
        │                      ↓                      │
┌──────────────┐        ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│    FILM      │        │    BIT.      │      │    DATA      │      │ CORRELATION  │
│  TRANSPORT   │──────→ │  VALIDATOR   │───→  │  REGISTER    │───→  │  PROCESSOR   │
│              │        │              │      │              │      │              │
└──────────────┘        └──────────────┘      └──────────────┘      └──────────────┘
        │                                             ↑                    │
┌──────────────┐                                                          │        ┌──────────┐
│  VIEWING     │                                              ○──→         │ OUTPUT   │
│  STATION     │                                                          │        │          │
│              │                                              ↓           └──────────┘
└──────────────┘                                      ┌──────────────┐
        │                                             │   FRAME      │
┌──────────────┐                                      │  COUNTER     │
│  MANUAL      │                                      │              │
│  INPUTS      │──────────────────────────────────── └──────────────┘
│              │
└──────────────┘
```
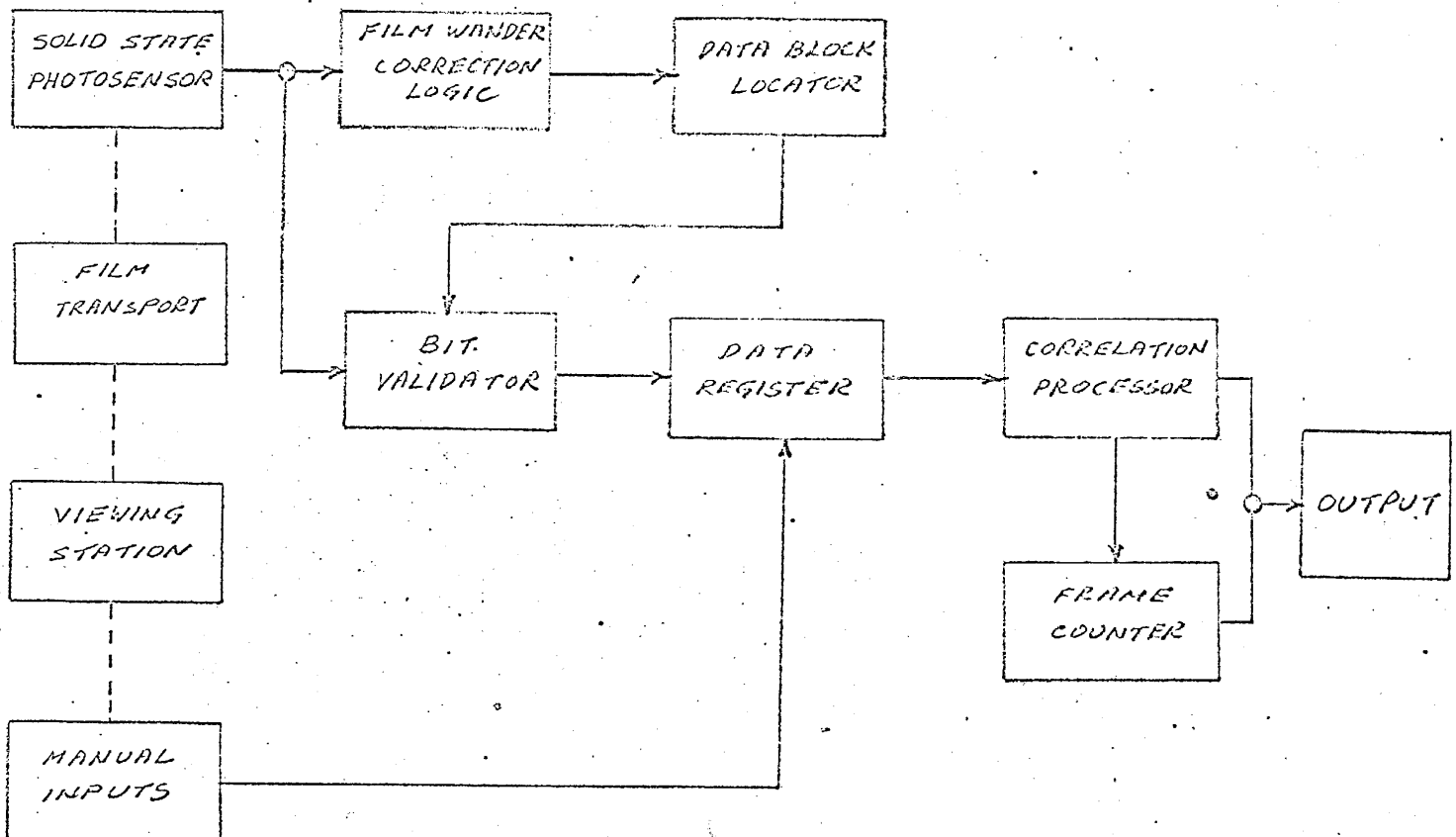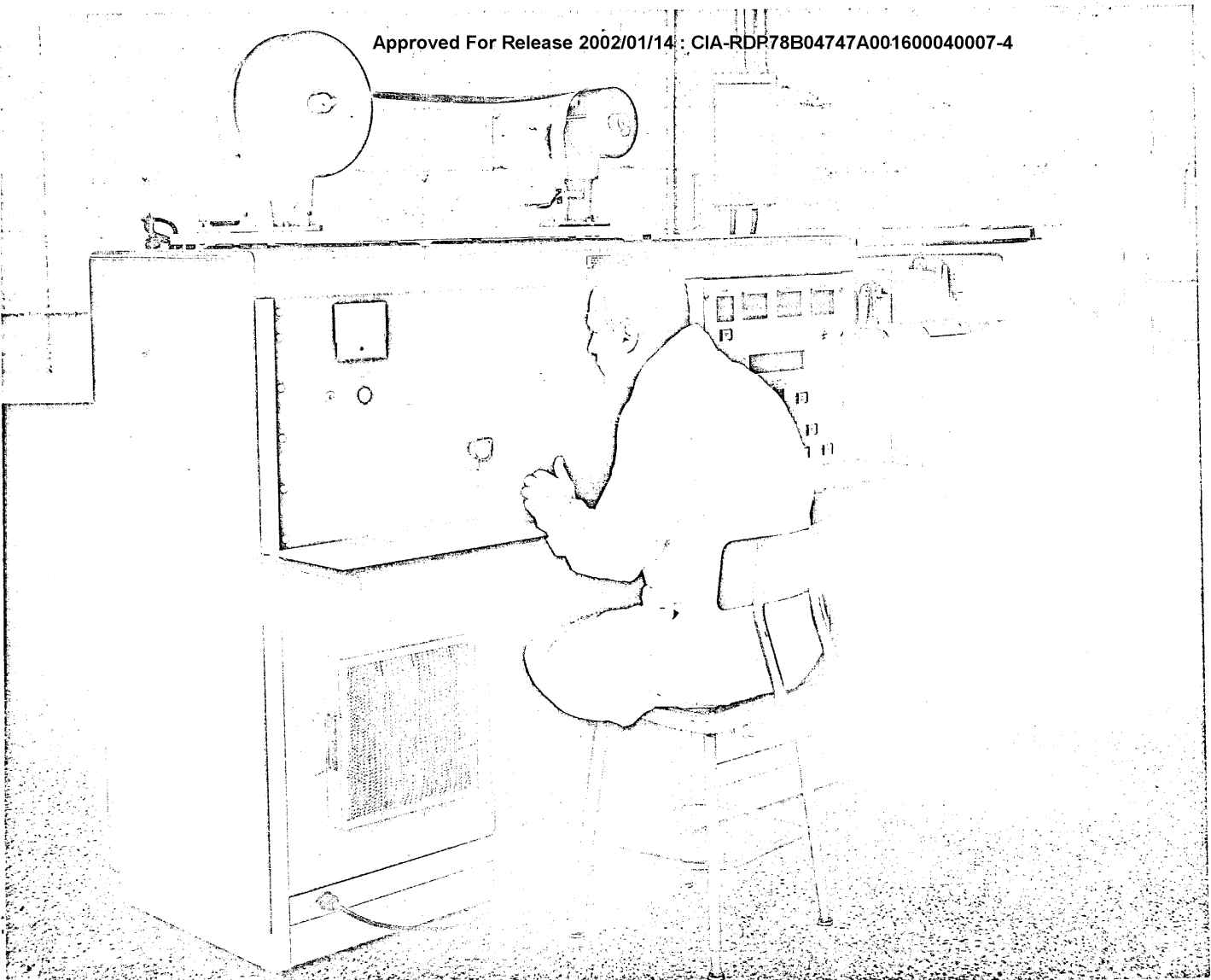
Photo Caption

Digitally coded data block annotated on aerial film is checked by operator

at viewing station of solid-state retrieval system. Spool of film being

read is at left center; rewind equipment is on top of console. IBM 519 for

data transfer to punch cards is at right.

CENTER ROUTING SLIP

FROM				DATE
Approve 25X1A				5 July 1966

TO	INITIALS	DATE	REMARKS
DIR			
DEP/DIR			
EXEC/DIR			
TECH ADV			
SPECIAL ASST			
ASST FOR P&M			
CH/SS			
ASST FOR OPS			
ASST FOR PA			
ASST FOR P&D	✓		Attn: ⬛⬛⬛ 25X1A
			DD/S+T has
CH/CSD			approved release
CH/IPD			of attached press
CH/PD			release provided
CH/PSD			The items in
CH/TID			brackets are
			deleted.
CH/CIA/IAD			
CH/DIA/XX-4			
CH/DIA/AP-IP			
CH/SPAD			
LO/CGS/CIA			
LO/NSA			

IP FM 30 (5-66) DESTROY PREVIOUS
EDITIONS

1436

25X1A

TRANSMITTAL SLIP	DATE 7 July 66
TO: ██████████	OL/PO/CAS
ROOM NO. 1036	BUILDING Amer Bldg

25X1A

REMARKS:

Attached is request from ██████ re:
request for press release on the 70mm
Data Block Reader (Contract ██████

Approval for such releases granted
providing deletions as indicated by
██████████ are made.

Please furnish this office with copy of
reply. thanks —— ██████████

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FROM: LB/SS

| ROOM NO. 5-S 468 | BUILDIN ██████████ |

25X1A

FORM NO. 241
1 FEB 55
REPLACES FORM 36-8
WHICH MAY BE USED.
☆ GPO : 1957—O-439445 (47)